



Nuclear Management Company, LLC
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, WI 54241

NPL 2000-0514

November 22, 2000

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, D.C. 20555

10 CFR 50.73

Ladies/Gentlemen:

DOCKET NOS. 50-266 AND 50-301
LICENSEE EVENT REPORT 266/2000-010-00
MANUAL REACTOR TRIP DUE TO CONCERNS FOR DIVER SAFETY
POINT BEACH NUCLEAR PLANT UNIT 1

Enclosed is Licensee Event Report 266/2000-010-00 for the Point Beach Nuclear Plant Units 1 and 2. This report is provided in accordance with 10 CFR 50.73(a)(2)(iv) as, "any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)". This report documents a manual reactor shutdown that was conservatively initiated by the plant operators due to concern for the safety and well being of a diver working in the Point Beach Unit 2 circulating water pump house discharge piping. This concern developed when communications with one diver was lost and the retrieval efforts by a second and third diver were initially unsuccessful in reestablishing contact.. The plant equipment and systems required to operate during and following the reactor trip and recover worked as designed. The divers were unharmed.

Immediate corrective actions have been completed and are discussed in this report. Additional corrective actions are being addressed by an incident investigation and root cause evaluation team. No new NRC commitments are identified in this report.

Please contact us if you require additional information concerning this event.

Sincerely,



A. J. Cayia
Plant Manager

Enclosure

CWK/jlk

cc: NRC Resident Inspector NRC Regional Administrator
PSCW INPO Support Services

NRC Project Manager

LICENSEE EVENT REPORT (LER)(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH
THIS INFORMATION COLLECTION REQUEST: 50.0 HRS.
REPORTED LESSONS LEARNED ARE INCORPORATED INTO
THE LICENSING PROCESS AND FED BACK TO INDUSTRY.
FORWARD COMMENTS REGARDING BURDEN ESTIMATE
TO THE INFORMATION AND RECORDS MANAGEMENT
BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY
COMMISSION, WASHINGTON, DC 20555-0001, AND TO
THE PAPERWORK REDUCTION PROJECT**FACILITY NAME (1)**

Point Beach Nuclear Plant, Unit 1

DOCKET NUMBER (2)

05000266

PAGE (3)

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TITLE (4)

Manual Reactor Trip Due to Concerns for Diver Safety

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	27	2000	2000	- 010	- 00	11	22	2000	PBNP Unit 2	05000301
									FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
1			20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(i)	50.73(a)(2)(vii)
POWER LEVEL (10)			20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(ii)	50.73(a)(2)(x)
100			20.2203(a)(2)(i)			20.2203(a)(3)(ii)			50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)			X 50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)			50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vi)	

LICENSEE CONTACT FOR THIS LER (12)NAME
Charles Wm. Krause, Senior Regulatory Compliance EngineerTELEPHONE NUMBER (Include Area Code)
(920) 755-6809**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 27, 2000, the Point Beach Nuclear Plant Unit 1 reactor was manually tripped, while operating at full power, due to concerns for the safety and welfare of contract divers who were conducting underwater inspections of the common circulating water pump house. Unit 2 was shut down and defueled at the time. The divers were inspecting the Unit 2 piping from the condensers to the outlet seal well when communications with one of the two underwater divers was lost. When the second diver was initially unsuccessful in pulling the first diver from the pipe using his safety tether, the decision was made to manually trip the operating unit and secure the Unit 1 circulating water pumps. The divers were subsequently removed from the water, examined by medical personnel and determined to be unharmed. Following the unit trip, systems and equipment operated as expected. An incident investigation and post trip review was completed in accordance with procedures and the unit was returned to full power operation on October 30, 2000. A root cause evaluation of the event is underway.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Event Description:

On October 27, 2000, at approximately 1028CDT, the Point Beach Nuclear Plant Unit No. 1 was manually scrammed and shutdown due to an immediate concern for the safety and well being of divers working in the circulating water pump house. Unit 1 had been operating in Mode 1 at full power prior to the reactor shutdown. Point Beach Unit 2 was in a refueling shutdown condition and defueled at the time of this event. Following the reactor trip, the main steam isolation valves were shut and the Unit 1 circulating water pumps were secured at approximately 1031 CDT. (The Unit 2 circulating pumps had been tagged out for the pump house work.) The equipment and systems required to function following the reactor trip performed as expected. The condenser steam dumps opened on the turbine trip and cooled the RCS to 535°F until the main steam isolation valves were shut. The AMSAC system functioned as designed and started all three auxiliary feedwater pumps after the feed water regulating valves went closed as expected. The unit was stabilized in the hot shutdown condition. The NRC was informed of this trip at 1100 CDT via a four hour notification pursuant to 10 CFR 50.72(b)(2)(ii) for a reactor protection system (RPS) actuation.

Following post trip reviews and initial incident investigations, Unit 1 was restarted on October 28. The unit was declared critical at 0222 CST and resumed full power operations at 0545 CST on October 30, 2000.

Cause:

As noted above, the Unit 1 reactor was shutdown because of concerns for the safety and well being of divers working in the Unit 2 side of the circulating water pump house. The divers had been at the site for several days inspecting various locations on the Unit 2 side of the circulating water pump house. The control room personnel were aware of the ongoing inspections but were not cognizant of exactly where the inspections were being conducted that day. Initially two divers entered the water to inspect the Unit 2 discharge piping from the condenser outlet to the seal well (see Component and System Description and attached Figure 11.7.1). One diver (Diver 1) entered the discharge pipe from the seal well while a second diver (Diver 2) remained at the pipe entry to tend the air lines and safety tether for the first diver. Continuous contact between the in-water divers and their above water line tenders is normally maintained via a hard wired communications link. Some time after the divers had entered the water and began the inspection, the top side line tenders discovered that they no longer had communications with Diver 1. Diver 2 was directed to use the safety tether line to pull in and retrieve Diver 1. After pulling in some slack, Diver 2 advised that the tending line was stuck and requested assistance. The diving supervisor then suited up to assist Diver 2 and entered the water. The control room was notified by telephone that a diver was stuck in the Unit 2 forebay. One of the on-shift Senior Reactor Operators immediately left the control room to investigate the situation. Onsite and offsite medical assistance was summoned to stand by at the pump house. Upon arrival at the scene, the shift SRO assessed the situation. Communication from one diver (Diver 2) was audible over the communications link and led those people on the scene, which included plant personnel, security officers and the remaining topside diver line tender, to believe at least one of the divers was in distress. Based on that information, and conversations with other personnel at the scene concerning the apparent location of the in-water divers, the on scene SRO recommended an immediate shutdown of Unit 1 and securing of the Unit 1 circulating water pumps. Interviews of operations personnel as well as those at the scene of the divers entry concluded that the location of the divers in Unit 2 piping was not clear to operating personnel resulting in the decision to shut down Unit 1.

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Subsequent to this action, all three divers were removed from the water. Although Diver 2 was somewhat winded from his exertions to retrieve Diver 1, whose safety tether had been snagged, the three divers were examined by medical personnel and confirmed to be unharmed. The failure of the communication link between the topside tenders and Diver 1 was determined to be due to a open wire in the communications line.

Corrective Actions:

Following the manual trip of the Unit 1 reactor, plant emergency procedures were entered to place the unit in a stable hot shutdown condition. An incident investigation and post trip review were completed in accordance with procedures and the unit restored to full power operations on October 30, 2000.

A root cause evaluation (RCE) has been initiated to examine the event in detail and identify the reasons for the apparent breakdown in communications between the personnel conducting and supervising the pump house inspections and the plant operating staff. Corrective actions identified in the RCE will be assigned to the appropriate work groups and managed within the licensee's corrective action program.

Component and System Description:

The circulating water system consists of the intake system pump house facility, circulating water pumps, traveling screen and screen wash system, main condensers, vacuum priming system, discharge flumes and interconnecting piping and valves (See Figure 11.7.1 attached). The circulating water intake system is common; but once in the pump house the system splits to Unit 1 and Unit 2 components. The intake system consists of an open-ended, cylindrically-shaped structure constructed of steel piling and limestone rock located 1750 feet off-shore. Two 14 foot diameter pipes connect the intake structure to the forebay of the pump house facility. The pump house facility consists of two intake surge chambers, a common forebay, pump bay and two discharge seal wells. The pump bay is divided into two sections with two circulating water pumps, three service water pumps, one screen wash pump and one fire pump taking suction from each section. Fourteen foot diameter motor-operated butterfly valves isolate the intake surge chambers from the forebay and discharge seal wells. Fourteen foot diameter motor-operated butterfly valve are also provided to isolate the seal wells from the respective discharge flumes. The arrangement of isolation valves permits reversing flow through either inlet pipe during winter operations to recirculate warm circulating water out to the intake structure to prevent freezing. The entrance to each pump bay section is partitioned into four separate passageways each containing traveling water screens to remove small debris. After passing through the screens, the water enters the pump bay section.

The circulating water systems in both units are identical. Each system consists of two single-stage, vertical pumps rated at 178,000 gpm, a common supply header, individual condenser waterbox inlet and outlet lines, and a common discharge header. The discharge header runs from the outlet of the condenser water boxes into two 96" diameter discharge lines. The two discharge lines run through the turbine building foundation and then transition into a 12 foot diameter line which runs underground and terminates under water in the forebay seal well compartment. It was this discharge piping that was being inspected by the divers during this event. In the days prior to this event, the contract diving service personnel had been on-site to inspect other areas of the Unit 2 circulating system including the forebay, pump bay and surge chamber.

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Safety Assessment:

The plant response during and following this manual reactor shutdown was as expected. The plant systems and components performed as designed. The safety and welfare of the public and the plant staff, including the contract divers, was not impacted by this event. This event did not involve a safety system functional failure.

System and Component Identifiers:

The Energy Industry Identification System component function identifier for each component/system referred to in this report are as follows:

<u>Component/System</u>	<u>Identifier</u>
Circulating Water Structures	NN
Heat Rejection System	KE
Main Steam System	SB
Reactor	RCT
Turbine	TRB
Circulating Water Pump	P

Similar Occurrences:

A review of recent LERs (past three years) identified the following similar event involving a manual ESF or RPS actuation:

<u>LER Number</u>	<u>Title</u>
266/2000-001-00	Manual Reactor Trip Due to Decreasing Circulating Water Forebay Water Level

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FIGURE 11.7.1 INTAKE AND PUMP HOUSE

